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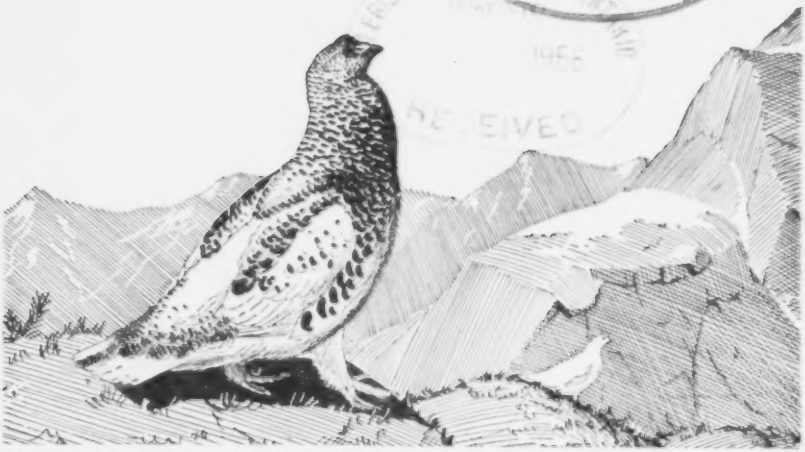

THE BIRDS
OF BRITISH COLUMBIA

(4) Upland Game Birds

Text by C. J. Guiguet
Illustrations by Frank L. Beebe

VICTORIA, B.C. OCTOBER, 1955

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Printed by DON MCDIARMID, Printer to the Queen's Most Excellent Majesty
1955

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Upland Game Birds

INTRODUCTION

This handbook deals with the two wild pigeons and with all the species of grouse-like birds occurring in British Columbia. It includes exotic species introduced and released in the wild as game birds but does not include species that were introduced primarily for display in zoos. Wild turkey and capercaillie were liberated in the Province but have so long since disappeared that they, too, are omitted. The sage hen, though not authentically recorded in recent years, is included because it was once, and perhaps still is, part of the native fauna of the southern interior. The wild pigeons —that is, the band-tailed pigeon and the mourning dove—are not closely related to the grouse-like birds, but are included here for the sake of convenience, and because they do fit under the somewhat arbitrary title "Upland Game Birds."

"Grouse-like birds," otherwise known as gallinaceous or scratching birds, are related to the common barnyard chicken and have many characteristics in common with it. In general they have short, rounded wings and spend most of their time on the ground; they are excellent runners, very seldom make prolonged flights, and even the highly coloured ones are adept at hiding. In very sparse cover the gaudy full-plumaged cock ring-necked pheasant can efface himself almost completely, and our native grouse in their sombre browns and greys blend so well with their natural surroundings that even the practised eye has difficulty in seeing them at rest. When disturbed to the point of flight, most of these birds break suddenly from the cover with loud calls and a rush of wings that often startle the intruder. The flight is swift and in most species is characterized by alternate periods of sailing and rapid wing beats. These attributes, coupled with palatability and general beauty, have placed the grouse-like birds high on the list of favourite North American game.

Our native gallinaceous fauna is made up entirely of species of birds commonly designated as grouse—birds characterized by feathered nostrils and by feathered legs, the feathers extending to the base of the toes and beyond in the case of the ptarmigan. The name "ptarmigan" has been applied to those alpine and arctic species that change to white plumage in the winter months, but which are nevertheless grouse. The quails, partridges, and pheasants are exotics, and all have been introduced, apart perhaps from the mountain quail, which, though also introduced, may have been indigenous to the south-eastern tip of Vancouver Island (Munro and Cowan, 1947).

Grouse are subject to cyclic fluctuation in numbers, much as is the varying hare (snowshoe rabbit), and, as with the latter, a great deal has yet to be learned regarding the causes of this periodicity. Thus, with the ruffed grouse for example, populations build up over seven- to ten-year periods until very high population densities are reached. These peak populations invariably suffer a violent decline, and most of the birds disappear from their former range to build up again slowly over the cycle years. Game managers now attempt to harvest as many birds as possible during the years of overabundance, and in so doing have shown that the decline may be somewhat alleviated.

The author and illustrator are indebted to Mr. Seth R. Halton, publisher of the Victoria Daily Colonist, for the use of the plates used as illustrations and to members of the Provincial Museum staff who co-operated whole-heartedly in the preparation of this handbook.

SOOTY BLUE GROUSE

Blue grouse have been a subject of controversy for many years among those interested in the speciation of birds, for two different-appearing groups are present in western North America. In British Columbia we have both groups, and some workers claim that each should have full specific status, each with one or more subspecies; others maintain that only one species, made up of four subspecies, occur. The average person has little interest in such controversy, and a blue grouse is a blue grouse wherever encoun-

tered. However, as the birds of the coast and coastal islands differ markedly from those of the interior, we shall treat these groups separately, dealing here with the sooty blue grouse, which occurs west of the Coast Range.

The sooty blue grouse occupies the mainland coast, coastal islands, and Vancouver Island, where it is resident the year round. The majority of the population spends the winter in coniferous

Sooty blue grouse.
(Male.)
(Female.)

forests on higher ridges, descending in March and April to the natural clearings and logging slashes to nest. With the onset of heavy logging operations resulting in vast areas of excellent breeding range, it was inevitable that the blue grouse population should increase, as indeed it did. To-day there are far more blue grouse in coastal British Columbia than there were when only natural

clearings were available for nesting. Unlike many wildlife species, the blue grouse has no winter range problem, for after breeding and raising the young these birds migrate to higher elevations, feeding throughout the winter upon an inexhaustible and readily available supply of coniferous buds and needles. In the Douglas fir belt they appear to favour that tree, while farther north Sitka spruce is utilized. In the summer months, berries, seeds, young fir needles, buds, and various insects are eaten.

During March and April the slash resounds with the unique ventriloquistic courtship call of the cock birds. This hooting is done from a tree or from the ground and can be heard for miles when conditions are right (page 7).

From six to ten (usually seven or eight) buffy, brown-speckled eggs are laid in a nest well constructed of ferns and twigs and lined with ferns, mosses, dry leaves, and feathers. The nests are situated on the ground, usually at the base of a stump, near a fallen log or under a tree. Young are precocial, leaving the nest to follow the hen shortly after hatching. In the early part of the season, broods of six to eight young may be seen, but later on from two to four chicks is the more usual number, the others having succumbed to predation, parasitic worms, and other diseases to which these birds are subject.

In July the cock birds migrate up the hills, leaving the hens and their broods on the slash, where they remain for varying lengths of time. Some years these family groups move up early, often before the legal shooting season opens; other years they remain longer and a good harvest is taken. The factors controlling this movement are not clearly understood, but it seems that weather conditions are responsible in part.

There is little need to describe the blue grouse here. The illustration shows a cock bird with large air-sacs distended on the neck and with the tail spread to show the rounded tail feathers and grey terminal band. These points are diagnostic in separating the sooty grouse group from the dusky birds found east of the coastal mountains. The hen depicted here below the cock is a mottled grey and brown and not so clearly marked as the male; the tail band is present, however, and serves in identification.

On the Queen Charlotte Islands there is a blue grouse of this group which is characterized by a much redder hue, particularly in the hens. These are known as Sitka blue grouse and are closely related to the sooty grouse of the mainland coast and islands.

DUSKY BLUE GROUSE

There is little difficulty in associating blue grouse of the interior with the coastal birds, for in behaviour, size, and general appearance they are quite similar. Like the sooty grouse, these birds are large and heavy, adult males sometimes weighing up to 4 pounds. They winter in the high forests and breed on the lower slopes as a rule, although nesting birds are also found at high altitudes. They eat the same kind of foods, and in general act much like the coastal birds.

Major Allan Brooks (Bent, 1932) has summarized the differences between the sooty group and dusky group as follows:—

The Dusky Group—Interior

(1) Air-sacs: Skin not conspicuously thickened or corrugated even in the mating season, colour flesh, changing to purple-red under the influence of excitement.

(2) Voice: "Hooting" of five or six notes audible for less than 100 yards, uttered from the ground. (NOTE.—The single hoot when in full display is alike and common to both groups.)

(3) Tail: In adult males, squarer, the feathers truncate at the tips; terminal band of grey darker, sometimes (rarely) absent or but faintly indicated.

The Sooty Group—Coastal

(1) Air-sacs: Skin highly specialized in the mating season, thick, gelatinous, the surface deeply corrugated into a series of tubercles of velvety texture and of a deep yellow colour. This condition is reduced when the mating period is over.

(2) Voice: "Hooting" of five or six notes of great power, audible for several miles. Usually uttered from high up in a tree.

(3) Tail: In adult males, rounded, the feathers rounded at the tips; terminal band of light grey averaging narrower than in Group No. 1.

Some ornithologists recognize only two races of interior birds —the pallid dusky grouse, which occurs in the dry southern interior, and Richardson's dusky grouse, which occurs throughout the remainder of the species' range in the interior of the Province.

Dusky blue grouse.
(Male.)

Others include a northern dusky grouse, which differs so slightly that many simply include it with the Richardson's. For our purposes this seems to be the sensible course, and it seems sensible also to follow the classification of Munro and Cowan (1947) and include all the British Columbia blue grouse under one species, comprised of four subspecies, two of which occur on the coast and coastal islands and two which occur in the interior.

To summarize then, on the coast and coastal islands we have the sooty blue grouse; on the Queen Charlotte Islands, the Sitka blue grouse; in the southern interior, the pallid blue grouse; and in the remainder of the interior range, Richardson's blue grouse.

It might be of interest to present the comments of Munro and Cowan on the range of this species in the Province. In their "Review of the Bird Fauna of British Columbia" (op. cit.), they write:—

"The blue grouse is resident in many parts of the Province (east to Alberta and north to Yukon Territory) including Vancouver Island, the Queen Charlotte Islands, and the islands in the Georgia Strait. At one season or another it frequents all biotic areas from sea-level to the alplands where these adjoin. There are large areas in the interior entirely unoccupied by blue grouse, one being that part of the Cariboo Parklands between the Thompson and Fraser Rivers from approximately 70 Mile on the Cariboo Road for an undetermined distance north. In the central and northern parts of the Province a mountain habitat is occupied, the intervening valleys and forested plains are not."

SPRUCE GROUSE

The spruce grouse, more often called spruce partridge, is a forest-dwelling bird confined, in British Columbia, to the extreme northern part of the Province. An eastern race occupies the Peace River Parkland area, and a western form occurs in the north-west from Atlin Lake south to Telegraph Creek. There are few apparent field differences in these races, but the spruce grouse is likely to be confused with the Franklin grouse, which occurs from the southern boreal forest areas, through the sub-alpine habitats, the Columbia forest regions, and south at higher altitudes into northern Oregon.

The spruce partridge is a relatively small grouse measuring about 15 inches long. The male plumage is predominantly black and grey, broken on the flanks by white markings. The tip of the tail in this species carries a rusty, ocherous band, and the upper tail coverts are usually without white tips, although this marking is sometimes found in the north-western birds. The tail of Frank-

(Female.) (Male.)
Spruce partridge.

lin grouse is usually jet black to the tip, and the upper tail coverts terminate in a broad white band.

Females of both species are irregularly barred in browns, greys, and black and are more difficult to identify than are the males. However, what has been said of the former's tail applies to that of the hens as well, though sometimes the differences are not so apparent.

Spruce grouse nest on the ground, usually under a low branch of spruce or similar cover. The nest is generally a slight depression in the moss and is lined with dead leaves and grass. The hen lays from ten to sixteen beautifully marked eggs, said to be the most beautiful laid by any of the grouse. They have a pinkish

or buffy ground colour and are strongly marked with spots and blotches of rich russet-brown. The young are precocial, running with the mother almost as soon as they dry off after hatching. At this time they eat many insects, but the older birds are said to live largely upon the buds and needles of coniferous trees, augmenting that diet in the summer with whatever berries may occur.

The courtship display and call notes of the male spruce partridge are elaborate and very similar to that of Franklin grouse (page 12).

FRANKLIN GROUSE

In comparing the above illustration of Franklin grouse with that of the spruce partridge, note the absence of the broad tail band and the presence of a prominent white tip on each of the tail covert feathers. These are the distinguishing characteristics used in the field. Sometimes a narrow white band is present at the tail-tip, but this is never as broad as the buffy-ochre band of the spruce partridge.

The range of Franklin grouse extends from south-eastern Alaska, south throughout British Columbia to northern Oregon and central Idaho, but we find them confined more and more to higher altitudes as we go south.

In their behaviour, nesting, habitat preference, and food habits the Franklin grouse closely parallels the spruce partridge, and in fact the two birds are considered by many as of the same species. Both Franklin grouse and the spruce partridge are rather " stupid " birds, easily approached and often showing a remarkable lack of fear of man. When perched, they appear loath to fly and are easily knocked from the tree with stick or stone, and there are several records of individuals actually catching these birds by hand. In the Cariboo we often secured our dinner by snaring a " fool-hen," as this grouse is often called, from its perch with our trout-rods, and during the late summer and early fall the flesh was delicious. Later, when the birds were feeding upon the needles of spruce or ferns, the flesh was unpalatable. The tendency to sit tight, combined with poor eating quality, places these grouse in a low game category in the eyes of most sportsmen, with the result that few bother to hunt them.

Franklin grouse.
(Male.) (Female.)

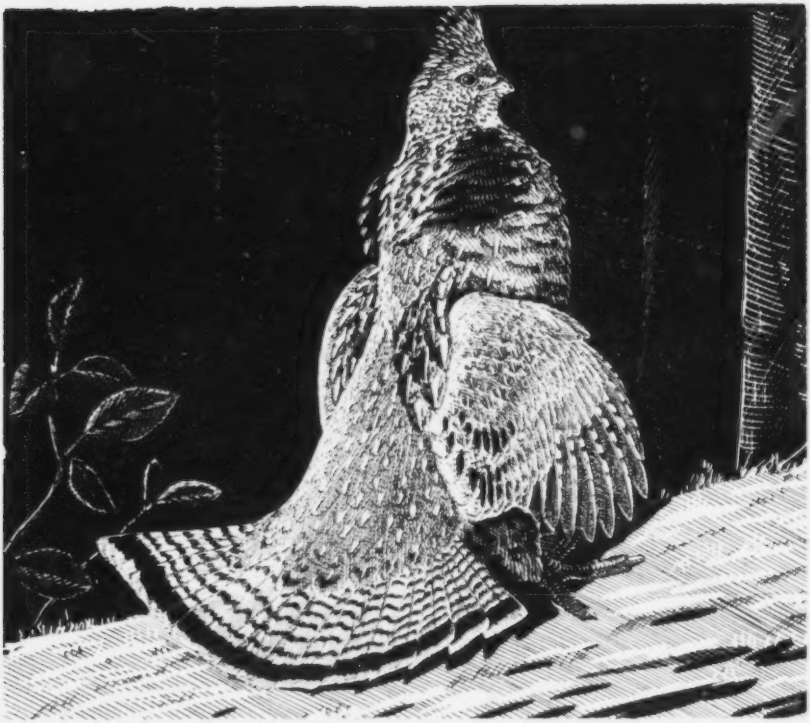
The courtship pattern of this grouse as described by the late T. T. McCabe (Bent, 1932) closely parallels my own observations, and, I believe, was seen in the vicinity of Indian Point Lake, where I, too, spent many hours watching birds. He writes:—

"When we came back the hen had appeared and was squatting flat on the ground in the center of the beaten trail. Her appearance was normal and remained so through the ensuing episode. Perhaps 20 feet away the cock was walking down the trail toward her in a typical attitude of display—head drawn up and back, tail spread through two-thirds of a circle and vertical (not bent forward over

the back), the fine undercoverts falling back from it like the sticks of a fan, the wing points slightly dropped, the combs bulged upward into elongate crimson rolls, which met in the center of the cranium. In this guise he strutted very slowly, with a statuesque pause of about eight seconds every 2 or 3 feet.

"At a distance of about 10 feet the whole bird was transformed with the suddenness of a conjuring trick, and the similarity to the courting ruffed grouse disappeared. The tail snapped together and sank nearly to the ground. The head was lowered and extended far forward. The plumage was flattened so that a hard sleekness replaced the fluffy rotundity, and the size of the bird diminished by half. The attitude was like that often assumed by ruffed grouse or ptarmigan when luring an intruder away from nest or young, but in place of their whining note a low guttural was produced, vibrant and threatening, in from five to seven periods, the first two distinct and slow, the remainder losing interval and less sonorous, trailing off to silence. This was accompanied by a slight movement of the tail in the vertical plane, rather a periodic trembling than a snapping like that of the courting ruffed grouse. One of us thought that with this movement the rectrices were slightly opened. Between these utterances the bird moved 3 to 6 feet, very slowly, and not in short runs after the manner of ruffed grouse. The movements were in various directions, a few perhaps directly toward the hen, but for the most part oblique and keeping 5 or 6 feet away.

"After about four minutes of this the hen took wing, silently, but with amazing suddenness and speed for so phlegmatic a bird, flashed down the trail, and made a quick turn into the woods. Her sudden start scarcely gained a foot on the eager male, and both disappeared together. Perhaps a final scene was enacted near by. Perhaps many more were set, with many variations, before the subtle interplay of impulse and reaction rose to its climax. The details of the primitive drama, with its suggestions of threatening, beseeching, lamenting, lie beyond our power of interpretation, but, except in the opening movement, the element of simple and lavish display, so widespread among other genera, was absent."



Ruffed grouse.
(Male.)

RUFFED GROUSE

The ruffed grouse is perhaps the best known of all the gallinaceous birds on the continent, and as such needs little description here. The illustration covers all points except colour. Two colour phases may occur on the same range—one in which the overtones and tail feathers are rusty red, and one in which they are a beautiful shade of grey. The species is widely distributed, from Atlantic to

Pacific seaboards, north to the tree limit, and southward to the southern States wherever favourable habitat occurs.

This bird is highly rated as game because of its speedy flight, beauty, and edibility. It is undoubtedly the best eating of all the native grouse and, where hunted, has developed a wariness that tries the skill of man and dog to the utmost. In the west, ruffed grouse frequent the deciduous growth to a large extent; here they skulk and run through the undergrowth, and when put to flight under such conditions, it is almost impossible to bring a gun to bear on the speeding form as it hurtles through the trees, banking vertically through narrow openings, and thundering off out of sight and out of range. At other times, in the evening and early morning, flocks are often encountered around the edges of natural clearings and roadways, or sometimes roosted in the bordering willow and alder. At such times these birds often appear to be fearless, paying practically no attention to the intruder. It is at such times that their chief enemies—man, the great horned owl, and the goshawk—reap a harvest, but under most conditions the ruffed grouse is well able to take care of itself.

These birds are subject to a cyclic behaviour that appears to run over ten-year periods in the north-west. The population builds up to vast numbers over that period and then declines abruptly, so that cover once harbouring coveys is completely devoid of birds. The cause or causes of this phenomenon, which is apparent in some other species of birds and mammals as well, have never been satisfactorily explained, despite continuous study by many scientists over the past half-century.

One of the best-known habits of the ruffed grouse is the drumming behaviour of the male. The familiar "pup pup pupping" sound, which has been likened to the noise made by a small gas-engine, is part of the spring-time wherever this grouse occurs. What nature-loving person has not, as a youngster and since, followed this woodland noise to its source and watched in wonder the pomp and ceremony of the displaying male as he strutted fan-tailed for his lady love? The drumming sound is not produced vocally, but by a rapid vibration of the wings. The most often

heard vocal noises are the high-pitched clucking alarm notes repeated with each step as the disturbed bird moves off through the cover, hackles and crest erect, and that dark eye watching your every move.

The ruffed grouse nests on the ground, and the brooding hen is practically invisible. She lays from nine to twelve smooth buffy-coloured eggs which are sometimes speckled with pale brown. She is a devoted mother, and individuals have been known to attack everything from fox to man in defending the young. Usually, however, she puts on the " wounded bird act," fluttering away all the while uttering a peculiar whining note which is, perhaps, a signal for the chicks to hide.

Five subspecies of ruffed grouse occur in the Province, but the differences apparent in the field are so slight that we need not enlarge upon them here.

Of the reading I have done on this beautiful game bird, I like Charles B. Morss's thoughts after a day in the field (Bent, 1932):—

" In no other game bird do the tones of gray, black, cinnamon, and white shade and blend with such quiet harmony. Child of the wilderness that he is, in the full dark pupil of that eye surrounded by an iris of October's own brown, seem always to dwell the brooding shadows of the great forest he loves so well. And in the moulding of him Nature seems to have embodied all of the beauty, all of the charm, all of the inexplicable strangeness and romance of the autumnal woods and produced her feathered masterpiece—the perfect game bird. And wherever you chance to find him—in the still shadow of ravine and glen where the climbing bittersweet twines its orange offering about old stumps and windfalls—on rocky hillsides clad with second growth where the wild barberry fruits in crimson racemes and berries of the winter-green flash among the leaves—or in the grass-grown tangles of birch meadow and maple swamp where glows the steady flame of the black alder—always is he the woodland's pride, alert, instinct with life, and filled with a spirit and dash that furnishes, when in such mixed cover as we were hunting this day, the very climax of shooting with the shotgun."

WILLOW PTARMIGAN

The willow ptarmigan pictured in flight here occurs in the highlands throughout eastern British Columbia, extending down the Rockies into the United States. In the central and western areas it has been recorded south as far as the Chilcotin plateau, and in the coastal mountains south to the 52nd parallel. A race of willow ptarmigan occurs on Porcher Island, but other insular records are lacking, and, as far as known, none occurs on Vancouver Island.

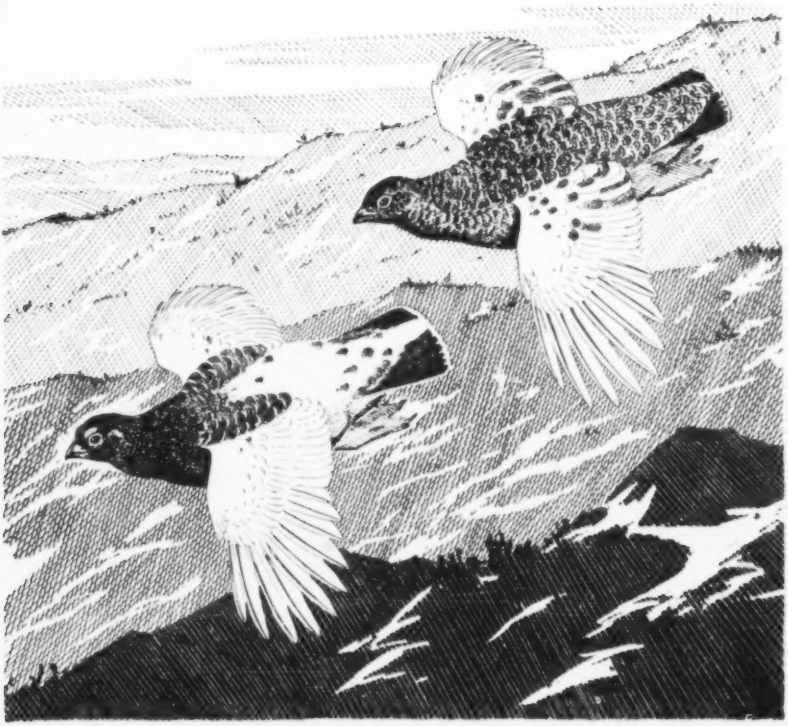
These birds are encountered in summer just above the timberline, although on occasion I have flushed coveys on the higher slopes. They frequent that marginal area between the thick forest and the treeless alplands, where stunted alpine fir, shrubs, lupine, and the like provide ample cover. In winter they migrate to the lower slopes, where willow and alder supply food and cover.

In summer plumage the willow ptarmigan verges on the gaudy. The males with their solid chocolate-red head and breast, crimson eye comb, mottled black and brown backs (almost always interspersed with white), the white wings and shaggy feet, all combine to present a striking picture as they roost on some rocky outcropping back-dropped by the lush sub-alpine flora.

The females, less striking in appearance, but nevertheless beautiful birds in their barred plumage, closely resemble females of the rock ptarmigan.

The willow ptarmigan nests over its entire range—in beach debris on the Aleutian Islands, on the tundras of the Arctic, and, to the southward, along the timber-lines of the higher mountains. It usually lays from seven to ten eggs, although as many as seventeen have been found in one nest. The eggs are beautifully and heavily marked in red over a light-cream ground colour. The red is said to be almost crimson when the eggs are first laid, but darkens to a deep maroon colour with drying off and exposure. Chicks are precocial, running around with the parents soon after hatching.

Willow ptarmigan are devoted parents, and the male, strangely enough, is a devoted spouse. Unlike many other species, he remains with the hen throughout incubation and raising of the



Willow ptarmigan.
(Male.) (Female.)

young. Many accounts of the fearlessness of the parent birds are found throughout the literature concerning this species. Eye-witness accounts of attacks on almost everything up to a grizzly bear are on record, and the furious abandon of the attackers, it is said, must be seen to be appreciated. My experience with these birds has been limited to adults and nearly full-grown young, which, for the large part, seemed quite unconcerned by my presence, allowing approach to within a few feet before flying off.

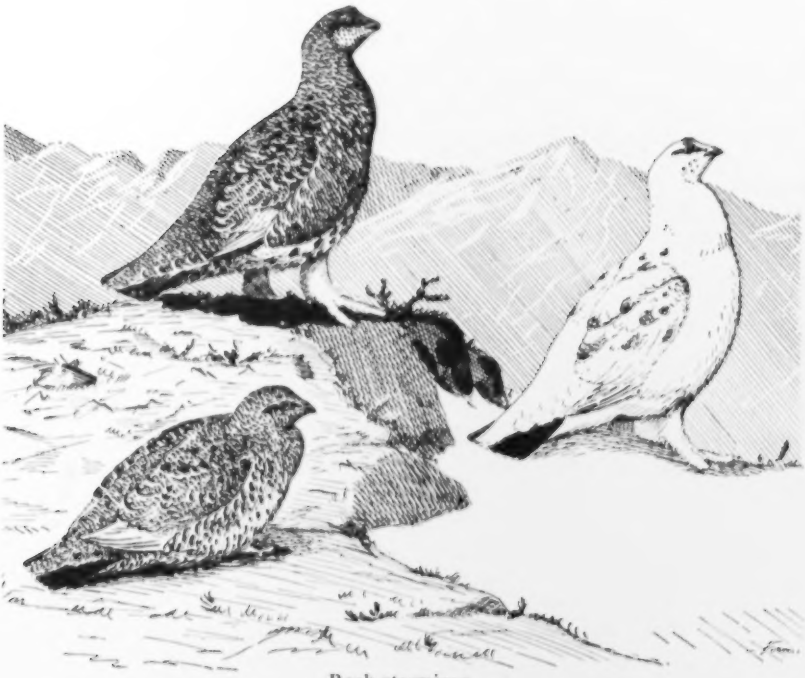
The willow ptarmigan is subject to violent fluctuation in numbers, and periodically they all but disappear from the wildlife scene. During "peak years," however, they are said to gather in the northern valleys in unbelievable numbers, and flocks have been likened to "snow drifts in motion." Flocks of over 5,000 birds are on record.

Edwyn Sandys, in Bent's Life Histories (1932), gives the following account of the courtship behaviour of the willow ptarmigan:—

"The love-making of the ptarmigan is not unlike that of the Canada grouse, or 'spruce-partridge.' The males, with their plumage changing from white to the handsome summer dress, strut with all the pomposity of their kind. The red combs over the eyes are swollen and very conspicuous, as the bird struts with head thrown far back, tail raised and spread, and wings trailing. Presently he leaps into the air, raises himself higher and higher with a vigorous flapping, then sails on set wings through a descending spiral, which brings him back to his starting-point. While thus a-wing, he utters a curt, gruff challenge oft repeated, a defiance to all rivals. Again he struts, and again goes into the air, it is frequently common to see male after male arise from near-by stations. While so occupied the birds make considerable noise, the bark-like challenge of other calls being heard for some distance. Meanwhile, the females loiter about in the cover, admiring the efforts of the males, and gradually acknowledging their charms. The inevitable battles follow—spirited encounters, in which many hard knocks are given, and much pretty plumage marred, until the weaker have been well whipped."

ROCK PTARMIGAN

Of the three ptarmigan occurring in British Columbia, the rock ptarmigan is undoubtedly the least known, possibly because this species is restricted more to Arctic conditions than are the white-tailed and willow ptarmigan. In size it is intermediate between the small white-tail and the larger, more common willow, but, like those birds, it has toes feathered to the claw. It changes to snow-white plumage in the winter (apart from the tail retrices and eye



Rock ptarmigan.

(Male.) (Winter.)
(Female.)

bar), and it is restricted to high altitudes in the southern part of its range.

The distinguishing feature, especially in winter, is the prominent black bar running through the eye. In addition, the bill is smaller and more slender than in the willow ptarmigan, with which it is most easily confused. Both rock and willow ptarmigan have black tail feathers, summer and winter, and thus are easily distinguished from the white-tailed ptarmigan. In winter plumage the black bar is usually sufficient to separate the rock ptarmigan from

the others, but this feature is sometimes lacking or nearly lacking in some individuals. The smaller size and more slender bill are then the only dependable features for identification. In fall and summer plumage the difficulties of identification increase, for the black eye bar is not so discernible. On the whole, however, the male rock ptarmigan is more barred than are those of the other two species, and never has the solid reddish head and breast found in full-plumaged summer males of the willow ptarmigan. In fall plumage, which is a transition between the summer and winter, the difficulties increase, and as moult in ptarmigan seems to be a year-round process, a certain amount of caution is necessary in the field identification of these birds. Female rock and willow ptarmigan are even more difficult to separate because of the similarity in plumage, and specimens in hand are usually needed to certify identification.

So far we have one record of rock ptarmigan in the southern part of the Province—that from Mount Seymour near Vancouver. All the other specimen records are clustered in the northern part of the Province. It seems that a great deal more collecting of these alpine birds is necessary, and when this is accomplished, the species may well prove to be more widespread than the records show.

In general behaviour and food habits the " rock " is said to be much like the better-known willow ptarmigan. In courting behaviour, however, it differs, and the following passage by Turner in Bent's Life Histories (1932) may be of interest to the reader:—

" The mating season begins in May, and during this period the male acts in the strangest manner to gain the affections of his chosen mate. He does not launch high in air and croak like the willow ptarmigan, but runs around his prospective bride with tail spread, wings either dragging like those of the common turkey, or else his head and neck stretched out, and breast in contact with the ground, pushing himself in this manner by the feet, which are extended behind. The male at this time ruffles every feather of his body, twists his neck in various positions, and the supraorbital processes are swollen and erect. He utters a most peculiar sound, something like a growling ' kurr-kurr '; as the passion of the display increases the bird performs the most astonishing antics, such

as leaping in the air without effort of wings, rolling over and over, acting withal as if beside himself with ardor.

" The males engage in most desperate battles; the engagements last for hours or until one is utterly exhausted, the feathers of head, neck, and breast strewing the ground. One maneuver is for the pursued bird to lead the other off a great distance and suddenly fly back to the female, who sits or feeds as unconcerned as it is possible for a bird to do. She acts thoroughly the most heartless coquette, while he is a most passionately devoted lover. He would rather die than forsake her side, and often places himself between the hunter and her, uttering notes of warning for her to escape, while attention is drawn to him who is the more conspicuous."

WHITE-TAILED PTARMIGAN

The white-tailed ptarmigan occurs in suitable habitat throughout the British Columbia mainland and on Vancouver Island. In summer it frequents the high, open, sparsely vegetated mountain ridges, descending to the timber during winter months. It is a small grouse measuring only a foot in length from bill to tail. During winter the plumage is snow white throughout, but in summer the back is patterned in olivaceous grey, finely vermiculated with black; the breast, neck, and flanks are irregularly marked in browns, black, buff, and grey; abdomen, under-tail coverts, wings, and tail feathers remain white. Living, as it does, on the bare ridges and slopes, it is little wonder that such an effective camouflage in colour pattern should have evolved, and indeed this bird is a prime example of protective coloration in nature.

I once came upon a very large flock on the summit ridges of Cariboo Mountain, above the headwaters of the Atnarko River. At the time I was collecting birds for the National Museum, and desiring a series of this species, I proceeded to take a few birds with .22 dust shot. At first the birds paid little attention to the sound of the shot or to the death tattoo of their brothers' wings on the alpine gravels. In fact, several gathered around and even attacked their expiring kin. Suddenly, however, they became alarmed, and after a few seconds of rigid immobility they slowly settled down upon folded legs, and where there had been half a

White-tailed ptarmigan.
(Male.) (Winter.)

hundred birds in plain sight, there was apparently no living thing. Only by the closest scrutiny could a bird be detected, and even then, with eyes still focused upon it, the bird, like some optical illusion, would disappear, apparently merging with its surroundings. This, in an area flat as a table, with absolutely no vegetation and no stone larger than a man's thumb, seemed, indeed, one of nature's miracles.

In the winter months the white-tails leave the upper slopes and ridges, descending to timber-line and sometimes far below if

conditions are severe. In some areas they are often seen below the alpine ridges even during the summer months, at Lake Louise, for example.

The white-tailed ptarmigan feeds largely upon buds of willow during the winter months, and upon berries, insects, flowers, and seeds of alpine plants during the summer. It nests on the bare rocky slopes above the timber-line, laying six to eight buff-coloured eggs, variously spotted in different shades of brown. When on the nest or with chicks, the adult bird often appears to be completely unconcerned by the presence of man. She moves from the nest only at the imminent touch of the hand, and wanders about in the most blasé manner with her chicks, though the intruder's feet be only inches from them.

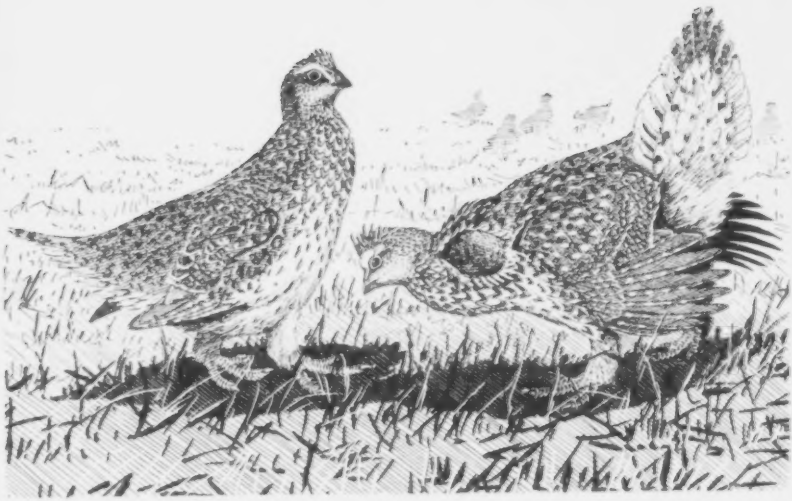
On one occasion, however, I found them extremely wild, and secured specimens only with difficulty. The birds, many of them half grown, would flush wildly at 30 to 40 yards distance and hurtle off down the mountain-side, presenting little opportunity for a shot.

SHARP-TAILED GROUSE

The sharp-tailed grouse, erroneously called "prairie chicken" by some people, is a large pale-coloured chicken-like bird finely marked in pale browns and ochres above, white below. The breast and flanks are marked with strong dark V's, and the tail feathers are largely white, apart from those in the centre which protrude and gave rise to the name "sharp-tail." The males have a prominent yellow "comb" over the eye and pinkish "sacs" on the side of the neck, which are inflated during courtship and when the birds are fighting.

Like other native grouse, these birds have an elaborate courtship display. Gathering in numbers on ancestral grounds, usually a bare prairie knoll, they pair off, the males bowing, stamping, and booming with tails erect and wings extended back, as illustrated here. The females usually appear to be quite unconcerned by all this behaviour, but apparently not in the outcome, for the sharp-tail is still plentiful where its range has not been destroyed.

In British Columbia the centre of abundance extends from the International Boundary east of the Cascades, north through



Sharp-tailed grouse.

(Female.) (Male.)

the prairie and parkland type of country where coniferous forest and deciduous trees are interspersed with grasslands. They are found north to the Nechako River, west across the Chilcotin plateau, and in the Peace River Parklands. There is one record from the extreme north-west corner of the Province, which is not surprising, for populations exist in the Yukon and in Alaska. Across the great plains they are, or were, abundant from the deciduous ravines and bluffs in the southern prairies to the northern transition zones between prairie and boreal forest.

The sharp-tail's nest is a shallow, poorly lined depression situated near some prairie shrub or thicket of heavy grass and in which ten to thirteen olive-coloured eggs are laid. The eggs, when first laid, have a purplish bloom which quickly fades. The downy young are precocial, running with the mother almost as soon as dry. For the early part of their existence they live mainly upon

insects, graduating to tender shoots, buds, and seeds as they grow older.

The sharp-tail is highly rated as a game bird; it rises rapidly from cover with a loud whir of wings, flying straight away usually, with short periods of sailing. When the wings are in motion, the bird rocks from side to side, providing a good point in field identification at a distance. The pale colour, lack of neck ornaments, pointed tail, and dark V markings on the breast make this bird easy to identify. Flocks often perch in deciduous trees, especially in the late fall and winter, and at such times they are easily spotted and seem unconcerned by the approach of man.

This species is subject to periodic fluctuation in numbers, being extremely abundant in peak years and almost entirely lacking during others. It does not occur in the heavy forests, and consequently is absent from the coast, coastal islands, and heavy forest belts of the interior. My favourite place for observing and hunting these birds is at Riske Creek, west of Williams Lake on the Chilcotin plateau. I have little doubt that there are good areas around Princeton and Kamloops to see sharp-tails, and should you be in the Kamloops area, I am sure that the game biologist there will be able to direct you to them. If you should have the opportunity to see a film entitled "Sunrise Serenade," produced by Encyclopedia Britannica Films, you will have a spectacular close-hand view of these birds dancing.

SAGE HEN

The sage hen is a very large grouse, measuring some 26 inches long, males weighing up to 8 pounds, females to 5. The male is a spectacular bird with long lanceolate tail feathers, prominent air-sacs on the neck, and curious worn-appearing quill-like feathers across the breast. On the back these grouse are finely marked in browns, greys, and white; below, grey and white with a large dark patch extending across the lower breast and abdomen.

Sage hens have evolved with the plants after which they are named, and their occurrence is limited to the higher sage-brush plains. In British Columbia they occurred at one time in the extreme southern part of the Province in the vicinity of Osoyoos

Lake. Specimens were taken there in 1864, but since that time no authentic records have been secured. However, unauthenticated sight records have been received in 1954 and 1955 from a sage-brush area in southern British Columbia.

In southern Alberta and Saskatchewan, sage hens were very plentiful in the late twenties and early thirties, and our most recent reports from those areas indicate that they still occur in numbers where the sage-brush plains remain. In the United States they once occurred from the Dakotas west into Washington State and south to New Mexico, Nevada, and eastern California. Much of their former range has now been destroyed through the agricultural pursuits of man, with the result that to-day these birds are much reduced in numbers and are rigidly protected in both Canada and the United States.

The courting behaviour of the sage hen, one of the most fantastic sights to be seen in the bird world, defies description in cold print. It has been photographed and incorporated in the previously mentioned film "Sunrise Serenade," along with the dances of the prairie chicken and sharp-tailed grouse. See that film by all means if you can, for observation of the actual performance requires a long journey, at a specific time—something the average individual cannot do.

Given here is William L. Finley's account as presented in Bent's Life Histories (1932):—

"On May 13 we rose at 3.15 and were in the blind a little after 4, still very dark. The birds at this time were already strutting. We could hear them and occasionally see a flash of white from the breasts. The birds were active between 4.30 and 6.30 a.m. and had left the strutting ground by 8.00 a.m. When the sage cock starts to strut, his tail spreads and the long pointed tail feathers radiate out in a half arc. The air sacs are filled and extend nearly to the ground, hiding the black breast feathers. This is the first movement. Then the bird takes one or two steps forward and throws up the pouch, apparently by drawing back the head and neck. The next movement is a repetition of throwing the air sacs up and down and getting under headway for the last toss of the pouch, which is brought down with a jerk, as one

Sage hen.
(Male.) (Female.)

would crack a whip, making a 'plop' that on a quiet morning we easily heard for a distance of 200 or 300 yards. The whole movement gives one the idea that the bird inflates the air sacs and then, by the rigid position of the body and throwing the head and neck back, gives these air sacs a very vigorous shaking. In the movement when the pouch spreads, the bare yellow skin on the lower part of the pouch or chest shows clearly. As the pouch is thrown up and down, the wings are held rigid, the tips of the wing feathers sometimes touching the ground. The white feathers that cover the chest are exceedingly stiff; these grate against the wing feathers, giving out a wheezy sound that at first I thought came from the inhaling and exhaling of air. I soon discovered that this rasping noise was made by the stiff feathers rubbing together.

This rubbing of the breast feathers against the rigid wing feathers seems to account for the very worn appearance of the breast later in the season. If there were any gurgling or chuckling noises I failed to catch them. As the strutting ends, the air sacs are deflated and each time the bird goes through the motion as if gulping or swallowing something.

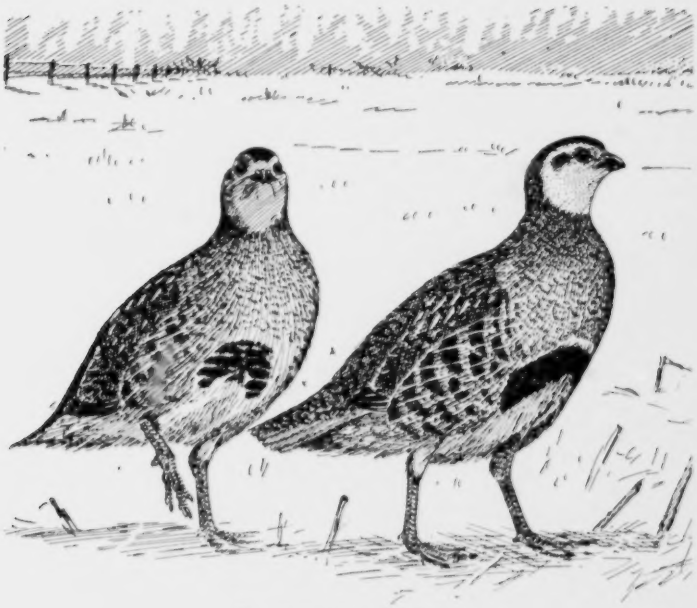
" There were 56 cocks scattered around in an area of 4 or 5 acres, each bird having a space for himself. Occasionally when one bird came too near another it resulted in a fight. Once I saw two fight with lowered heads. Occasionally they would jump in the air, striking very much as an ordinary rooster strikes. Two or three times I saw a female feeding near by, where the males were strutting. One passed by several cocks, but they paid no attention to her, or she to them. This gave me the impression that the strutting was not so much a courting performance or even a nuptial dance; it seemed to be a gathering place where the males came together and ' showed off ' among themselves."

EUROPEAN GREY PARTRIDGE

The European grey partridge was first introduced to North America in the latter part of the nineteenth century, sometime prior to 1879. This and subsequent early introductions were made by private individuals in the southern United States, where the birds flourished for a number of years and eventually vanished. Later introductions in the western plains near Calgary, Alta., met with remarkable success. Calgary sportsmen liberated about 70 pairs south and west of that city in 1908, and in 1909 they released more birds to a total of 207 pairs. As the stock was imported from Hungary, the European grey partridge is still known as the " Hun " or Hungarian partridge over much of its range in Canada.

Northern sportsmen liberated some 230 birds near Edmonton at a later date, and these also flourished, until in a short period of five years the grey partridge had spread some 60 miles north-west of Edmonton; in the meantime, birds resulting from the Calgary introduction had spread across the prairies and into the grain-fields of Saskatchewan. In 1924–25 they were introduced into Manitoba, again with great success, and the species became

an established part of the Canadian wildlife scene. Introductions were also being carried out in eastern Washington, Oregon, and Iowa, where the birds reproduced and spread throughout the favourable habitats.



European grey partridge.
(Female.) (Male.)

It is from this eastern Washington stock that the birds first came to British Columbia, moving up from the south through the dry forest biotic area as early as 1917. "Since that time it has extended its range north to Kamloops and was extremely abundant in the Okanagan Valley during 1925 and 1926, but, following an abrupt decline in 1927, has since maintained a low level of population" (Munro and Cowan, 1947). We haven't

the exact dates of the western introductions, but European grey partridges were released at Vanderhoof, in the Cariboo, and at various points in the Gulf Islands, Vancouver Island, and on the lower mainland of British Columbia near Vancouver, the latter about 1905 according to Taverner (1934). They disappeared from the northern areas, but small flocks still persist in the south, chiefly on Lulu Island, around Ladner, and on the Saanich Peninsula near Sidney.

The " Hun " is a small grouse-like bird, about half again the size of the California quail. The back is finely vermiculated in black, white, rust, and cream. The throat is a rich tawny-chestnut colour, as is a conspicuous line over the eye. The breast is grey; the flanks are marked in alternate bars of chestnut and white. The scapulars are rich brown with a central streak of cream, tail feathers rusty red (show only in flight), and the upper abdomen bears a dark-chestnut horseshoe mark. The sexes are coloured alike, but females are generally duller with less distinctive markings.

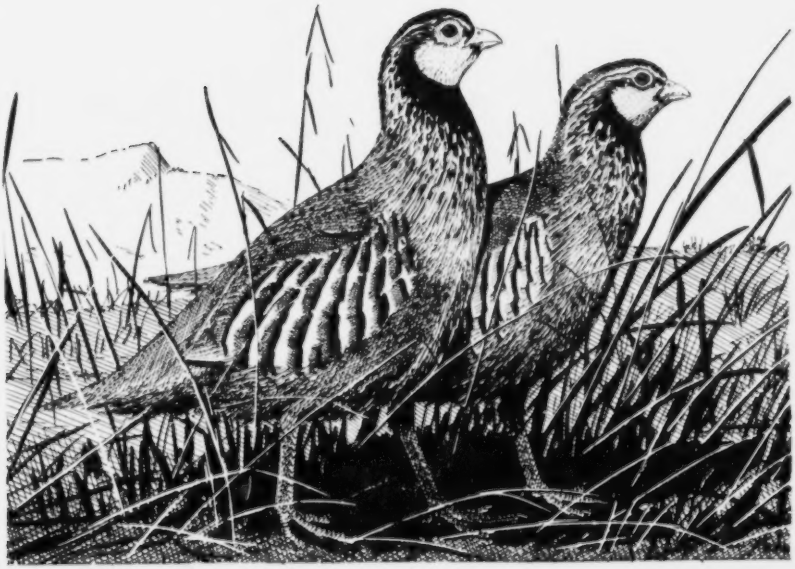
In this country the " Huns " have taken to the cultivated fields, where they feed largely upon grain. They are highly insectivorous on occasion, and when grasshoppers abound a large part of their diet is made up of those insects.

The female lays from eight to twenty small olive-coloured eggs, but as many as forty eggs have been recorded in a single nest, this undoubtedly the product of two hens. The nest is a shallow bowl, usually situated under a bit of brush, and when the female is brooding she is most difficult to see as the fine vermiculations of the back blend with the background to break her outline.

In the fall, family groups often " gang up " to form large flocks, and it is always a thrill when these fast-flying birds break erratically from cover to hurtle away over the stubble. This feature, as well as edibility and beauty, places the Hungarian partridge high on the game-bird list.

THE CHUKAR PARTRIDGE

The chukar is a beautiful partridge about 12 inches long, male and female coloured alike. The beak and feet are red; the throat is white to buffy; the breast pearl-grey banded by a black necklace which curves up below the eye. The back is a soft greyish-brown



Chukar partridge.
(Male.) (Female.)

throughout; the top of the head is grey with a white line above the eye; the necklace from the breast extends across the back of the neck in a suffusion of grey, white, and black. The abdomen is a soft pale brown, almost orange, and the flanks are strongly barred in grey, white, black, and brown. The heavily barred flank is the chief field recognition character.

The chukar is a native of northern China, Mongolia, India, Persia, Arabia, Asia Minor, and southern Europe. There it successfully occupies a great variety of habitats, ranging from deserts with temperatures of up to 150 degrees, through humid areas where 100 inches of rain falls annually, and in areas where winter temperatures fall well below zero. It is not surprising that a bird with such wide distribution should differ from one end of its range

to another, and that ornithologists have recognized at least twenty-two subspecies of chukar partridge.

Chukars were introduced and raised in California and Kansas sometime prior to 1934, and, from this population, stock was procured by the Missouri Fish and Game Department and released in that State. By 1937 there were about 1,000 chukars present in Missouri, and a fairly detailed study was made of their suitability as a game bird. Subsequently, 1,838 additional birds were released there, but by 1939 only three coveys could be found in the release areas, due, it was believed, to wandering rather than to death of the birds. Later, chukars were released in other central and western States, where a degree of success was apparent in the drier areas of Oregon and Washington. On the basis of this success the British Columbia Game Commission recently introduced chukars in suitable habitat near Kamloops, habitat which was unoccupied by native gallinaceous birds. The results of these introductions are under close observation by Game Commission biologists at Kamloops, who report that the birds are so far doing well.

According to the British Columbia Game Commission, the first introductions of chukar partridge in the Fraser Valley were made by a man named Hitch at Mission, about 1940. Mr. Hitch's early attempts failed, but later efforts are said to have been rewarded with some degree of success. So far as can be ascertained, chukars have not been officially released on Vancouver Island.

BOB-WHITE QUAIL

The bob-white is a small plump partridge slightly smaller than the California quail. Its back is pinkish-brown mottled with dark-brown patches and buffy lines. The breast is finely marked in black and white, giving a scaled appearance, and here, too, a pinkish ground colour prevails. The flanks are heavily streaked with white. A broad white line extends through the eye to the back of the head, breaking off down the neck in a series of white spots, and the throat is white with a dark border.

There are several subspecies of bob-white, originally ranging from south-eastern Canada through the eastern United States and

Bob-white quail.

across the south into Mexico. These subspecies are so much alike that the lay observer should have little trouble in identifying any of them as bob-whites wherever they may be seen. The range of the bob-white increased as agricultural pursuits spread across the continent, with the result that this little quail soon ranged across all of the south and mid-western States. It was so valued as a game, insectivorous, and song bird that many introductions were made into the far western States and in Canada.

The bob-white was first introduced to British Columbia shortly after the turn of the century, when birds were released on Van-

couver Island, the lower mainland, and in the interior around Vernon, Ashcroft, and Osoyoos Lake. The birds did well in the interior for a period of years, but subsequently disappeared, and the latest authentic record for those areas is listed as January, 1912, by Munro and Cowan (1947). The same authorities state that a few have survived near Huntingdon on the United States boundary. On Vancouver Island they were again introduced in 1922, near Victoria, but apparently failed as we have no authentic reports in recent years.

Bob-whites are musical; their name has originated from the call of the male in spring and summer, a melodious series of two or three notes interpreted in many ways by various observers, for example, " bob-white, more-wet, no-more-wet, peas-most-wet, buck-wheat-ripe, wha-whoi, sow-more-wheat " (Bent, 1932). The female uses a sweet four-syllabled whistle to answer the calling male and to call her chicks. Some maintain that this call is much superior in musical quality to that of the male, and it has been described as a " beautiful, soft, rich note with a decided emphasis on the second syllable, of a liquid quality with no harsh sounds—'A-loie-a-hee.' "

To others, the bob-white's appeal lies in its attributes as a game bird. It sits well to the dog, is colourful, fast flying, highly edible, and furnishes upland sport for more United States hunters than do all the other grouse-like birds together.

Some near-by Washington introductions were partially successful; Jewett records bob-white at Oroville just south of Osoyoos and on Whidbey Island, across the straits south-east of Victoria. On the whole, however, it seems that the bob-white is not suited to conditions in this Province.

CALIFORNIA QUAIL

California quail are birds native to western Oregon and California, but they have been introduced to many other parts of the United States, Canada, Chile, the Hawaiian Islands, New Zealand, and other countries. In some areas they have done well; in others they have met with partial success; and in still others they were complete failures. They were introduced to Vancouver Island and

California quail.
(Male.)

the Fraser Valley sometime during the 1870's, and to the southern interior of British Columbia about 1900, according to Taverner (1934). Munro and Cowan (1947) maintain that the southern Okanagan was populated by birds moving northward from the State of Washington, where the original stock was also introduced.

Introductions to the Fraser Valley were not successful, although small numbers still maintain themselves there. In the southern interior they are abundant in certain areas; we found them plentiful around Osoyoos in the spring of 1950. On Vancouver Island the populations built up tremendously, and for a number of years the California quail was most abundant from Sooke north through

favourable habitat to Comox. However, a population decline set in, and to-day the birds are maintained at a comparatively low level, although they are still locally abundant on parts of Saanich Peninsula and in the City of Victoria. Many introductions follow a pattern of initial abundance followed by decline and a continued low population level, but the reasons for this phenomenon are not clearly understood. In some cases the cause may be changing ecological conditions—the destruction of habitat through man's activities. However, this hardly seems to be the case with the California quail, which adapts well to hedge row and field, truck-gardens, and particularly to broom, which it seems to prefer as cover on Vancouver Island. Hunting is certainly not a factor worth considering, and depredations by raptorial birds, domestic cats, and the like have little effect on an alert bird with the breeding potential of the California quail (ten to twenty eggs).

The California quail is small, about 10½ inches long, plump, with an olive-grey back blending to soft shades of brown on the wing and flank, the latter streaked with white. The breast is a clear blue-grey; the abdomen is feathered in black and cream to give a scaled appearance. The throat is jet black, clearly delineated by a white border; a white line runs over the eye; and the forehead is buffy to cream in colour. The males have a prominent scimitar-shaped plume which leans forward from the top of the head. Females are duller, with head plume less prominent.

The quail do not indulge in ritualistic courtship dances as do our native grouse. They differ, too, in food habit, being less insectivorous than the other gallinaceous birds. Studies indicate that only 3 per cent of their food is made up of animal matter, the remaining being fruit, grasses, grains, and other seeds. They have the habit of " mounting guard " when the birds congregate to feed, an attribute that most people associate only with the Canada goose. In Bent (1932), Grinnell, Bryant, and Storer summarize this behaviour as follows:—

"A flock was heard calling and moving about on a brushy hillside some distance from the observer, but before coming into view a single individual preceded the rest and took his station in the branches of an apple tree, whence he could survey the region round

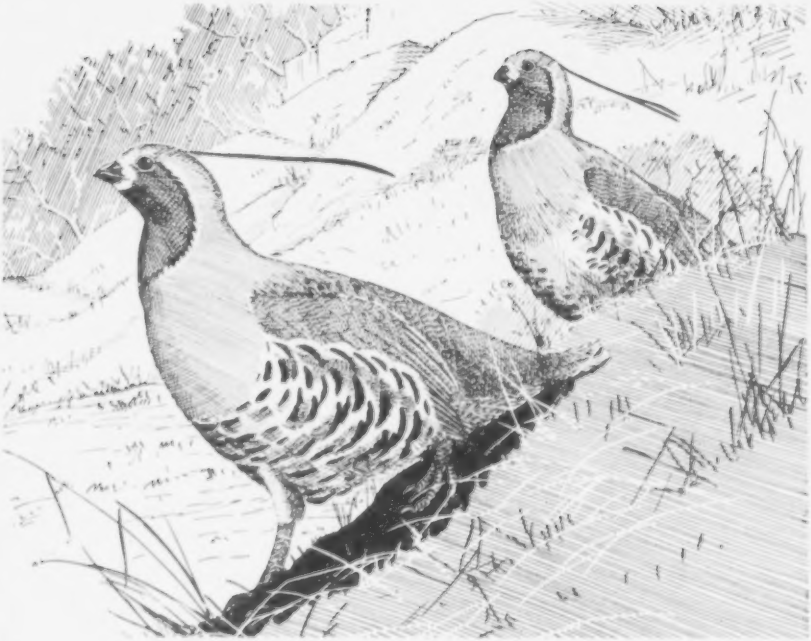
about. After carefully scrutinizing his surroundings for several minutes the 'kayrk' note was uttered several times in a low guttural tone. Soon members of the flock were seen coming down the hill in the same direction as taken by the sentinel, but their manner of approach was entirely different; he had exercised great caution and carefully examined the surroundings for possible danger, while they came with their plumed heads held low, searching among the clover roots for seeds and other articles of food. Some preened and fluffed out their feathers; others took dust baths. While so occupied they all kept up a succession of low conversational notes. Meanwhile the sentinel remained on his perch and continued on the alert even after the flock had moved some distance beyond him. Then a second bird mounted a vantage point and took up the sentinel duty and after a few minutes the first relinquished his post. While the flock was still in view, yet a third bird relieved the second. It would seem that by this practice, of establishing sentinels on a basis of divided labor, the flock had increased its individual efficiency in foraging."

The same observers also state that they had seen sentinels used when a flock was crossing a road, or when "bathing" in the roadside dust, and that the practice is made general use of in open areas, but they had never observed the habit when the birds were in tree-covered localities. During the breeding season it is known that the male mounts guard while the female is searching for a nesting-site, and again when she is incubating the eggs. Sometimes he also performs this guard function after the chicks are out but not fully grown.

In many areas this small game bird furnishes excellent sport for the hunter, but in British Columbia this is generally restricted to the southern interior and occasionally on Vancouver Island when the numbers of birds warrant a short open season.

MOUNTAIN QUAIL

The mountain quail, a western race of the plumed quail, originally occupied a range extending along the humid west coast of the United States from north-western Oregon south to Monterey County in California. In the early 1860's introductions were made



Mountain quail.

(Male.) (Female.)

to Washington, on San Juan and Whidbey Islands and others, and to British Columbia in the Fraser Valley and on Vancouver Island. These early introductions were not successful, but later introductions in the 1870's and 1880's apparently " took " in Washington and on Vancouver Island, and the birds, though not numerous, are still present in the Sooke hills, Highland District, and north sporadically as far as Duncan. There are records of the species from Vedder Mountain on the mainland taken in 1921, but to our knowledge no authentic mainland reports have been received since that time.

We have seen these birds on the road near Spectacle Lake on Vancouver Island, and we have continual reports of mountain quail from the Highland District near Victoria. Deer-hunters have reported several coveys in the vicinity of Durrance Lake, and Mr. Len Newbigging on the Victoria watersheds reports nesting birds annually in the hilly country around his headquarters there.

The mountain quail is slightly larger than the California quail; its chief distinguishing feature is a long plume which lies back from the top of the head. The back of the head and breast are soft grey in colour, blending to olive-grey on the back and tail. The throat is a rich chestnut bordered in white, and the flanks are of the same rich chestnut colour conspicuously marked with broad vertical white bars. The sexes are much alike in full adult plumage.

Unlike the California quail, this species is shy and retiring. The birds live on the higher slopes during the spring and summer, where they nest. They usually lay from ten to twelve buff-coloured eggs which often have a pinkish tinge. It is during the spring that these birds are most often seen, for the crowing cock is a noisy individual, calling lustily in the early mornings. The call is a "loud mellow 'wook' or 'to-wook'" with a definite note of query in it. A careful observer may often stalk and view the male as he calls from some rocky prominence or stump.

In the fall there is an altitudinal migration on Vancouver Island, the birds descending into the lower reaches to spend the winter. From reports received at the Provincial Museum, mountain quail were more numerous during 1953 than they have been in recent years, but on the whole this species is uncommon anywhere in British Columbia.

RING-NECKED PHEASANT

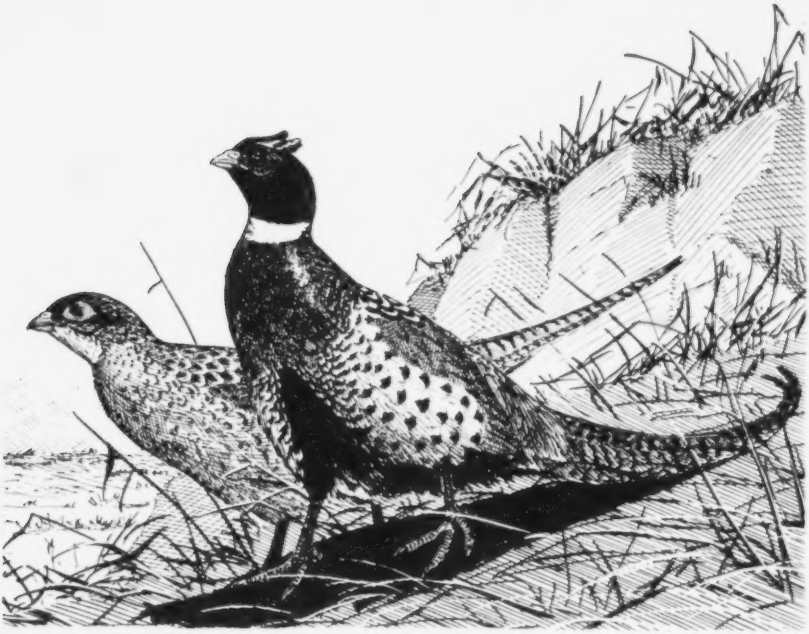
Many pheasants have been imported to North America as show birds, the spectacular plumage of the males often being a feature attraction at zoos and parks. There are a host of different kinds of pheasants, originating mostly in Asia, where they occupy just about every habitat from timber-line to the sea. Of these, the ring-necked or Chinese pheasant is the best known here, and the word "pheasant," to most North Americans, usually brings to mind the birds pictured.

The cock bird measures up to 36 inches from bill-tip to tail-tip. He is spectacular in colour, with metallic green head, red eye-piece, copper breast, golden flanks, and with maroon, cream, green, and pale dusty blue in elaborate patterns on the back. The long tail is cross-barred in black centrally and in reddish-brown on the outer edges. Females are smaller and have shorter tails; they carry no bright colours, being a dull pinkish-brown with darker-brown mottling on the back and flanks.

Pheasant introductions to this continent (where there are no native pheasants) have been many and varied since 1881, when they were first successfully introduced from China to Oregon by Mr. O. N. Penny, the American Consul-General at that time. Shortly thereafter more were brought in, and the populations began to build up in the west. After several early unsuccessful introductions, English-reared pheasants "took" in 1887 in the eastern United States, and other successful introductions followed in the 1890's. Since that time the pheasant has become an integral part of the wildlife scene in large sections of the continent.

According to Taverner, Mongolian pheasants came to British Columbia from Shantung Province, China, in 1909, and hybridized with ring-necked birds which apparently had been introduced here prior to that date. These and the many subsequent introductions involved three kinds of pheasant—*Phasianus colchicus, P.c. torquatus, and P.c. mongolicus*—all of which have now interbred to such an extent that none of our birds can be identified as belonging to one race or the other, but rather as a combination of all three. Originally these races or subspecies differed in range, size, colour, and the amount of white on the neck. *Colchicus*, the western Asiatic race, has no white ring; *torquatus*, the central race, a complete ring of white; while *mongolicus*, the eastern race, has the white ring interrupted in front. Actually, the birds in general appearance are similar even in the "pure" form, and the current names "ring-necked" or "Chinese" pheasant are as good as any to apply to our pheasants.

Since the early introductions there has been much pen raising, interbreeding, and interchanging of stock throughout the continent, and many game branches in the United States and Canada



Ring-necked pheasant.
(Female.) (Male.)

raise or purchase these birds for release in heavily hunted areas. In other areas—for example, southern Alberta, south central British Columbia, and the Dakotas—pheasants do well on their own, and large populations maintain themselves without subsidization.

The " chink " is a wonderful game bird—large, beautiful, fast of wing, and a far better table bird than any of our native upland game, with the possible exception of the ruffed grouse. It is a bird of cultivated land, hedgerow and " hardtack " bordering the agricultural areas, thus its haunts are easily accessible. It is well able

to look after itself, however, and tries the skill of man and dog to the utmost.

In British Columbia the ring-neck occurs throughout suitable habitat on the lower mainland, on southern Vancouver Island, and on the Queen Charlottes where introductions have been partially successful in the Tlell area. The birds are common in the Fraser Valley and are found north as far as Cache Creek, east throughout the Kamloops area, and south in the interior to the United States boundary. Birds have been introduced in northern areas at Quesnel and Vanderhoof, but apparently have not done well there.

THE BAND-TAILED PIGEON

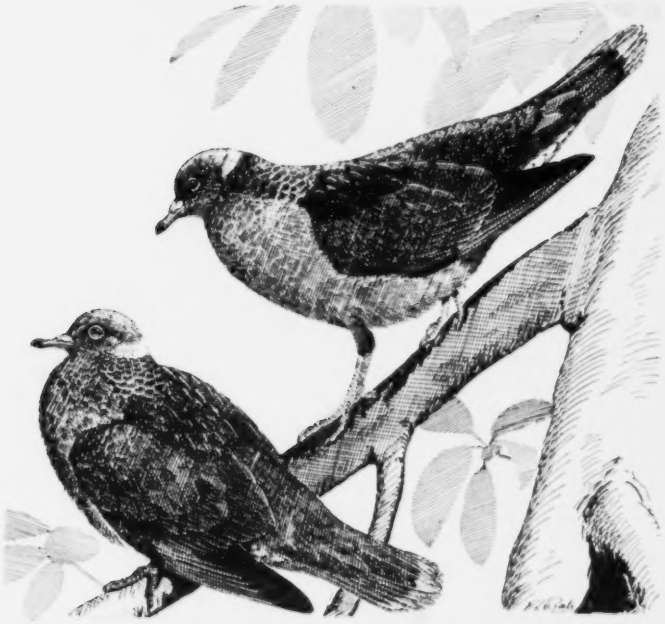
The band-tailed pigeon is a bird of western North America, confined chiefly to the western side of the Cascade Range. It occasionally wanders north to the valley of the Skeena River during the summer months, but the bulk of the population remains along the southern coast of the Province. Small flocks sometimes winter on the south end of Vancouver Island, where they frequent the oak-madrona groves. In April, band-tails appear in large flocks along the southern coastal mainland and on Vancouver Island, where they feed to a large extent in the fields, often damaging crops that are just emerging through the soil. Within a few days the flocks disperse to nest, and band-tails are then seen mainly in singles or pairs.

Like most wild pigeons, they build a very skimpy nest of sticks in branches of a tree—a nest with no lining, often through which the daylight can be seen. When the young are hatched and upon the wing, the band-tails congregate again in large flocks, and in late August, September, and October they are seen foraging in the grain-fields, in the oak groves, and where stands of cascara and dogwood provide ripened fruits.

Band-tails feeding in the fields are fine table birds, but the flesh of those feeding on the cascara is very bitter and unpalatable. It seems that pigeons taken very early in the fall, in the farming areas, are invariably good to eat, while those taken late in the season almost anywhere on the coast are not. At any rate, the unpalatability of the band-tail when the open season is on probably

accounts for the lack of enthusiasm that most British Columbia sportsmen display toward this, our only non-waterfowl migratory game bird.

In other respects it is the finest of game birds. Large and showy, it is 16 inches long, bluish-grey above, with a single dark band preceding the broad pale tail-tip. Below it is pink in colour



Band-tailed pigeon.

with white undertail coverts. There is a white mark behind the head, and the sides and back of the neck carry irridescent feathers that shine beautifully when seen in proper light. Band-tail pigeons are swift fliers, and have a habit of perching high on dead snags before descending to the feeding-grounds. The descent is often

a swift stoop, reminiscent of a hawk striking, and when the band-tails flash by overhead on half-closed wings, it takes an expert with the shotgun to bag them.

On the wintering-grounds in California, where these pigeons often feed in the fields, their alleged destruction of crops as well as their then renewed palatability has led to great slaughter in the past. So much so that at one period it was believed that this beautiful bird was on the way to extinction like its eastern cousin, the passenger pigeon. However, through proper game management and restrictions, an increase is now apparent in band-tails returning to nest in British Columbia.

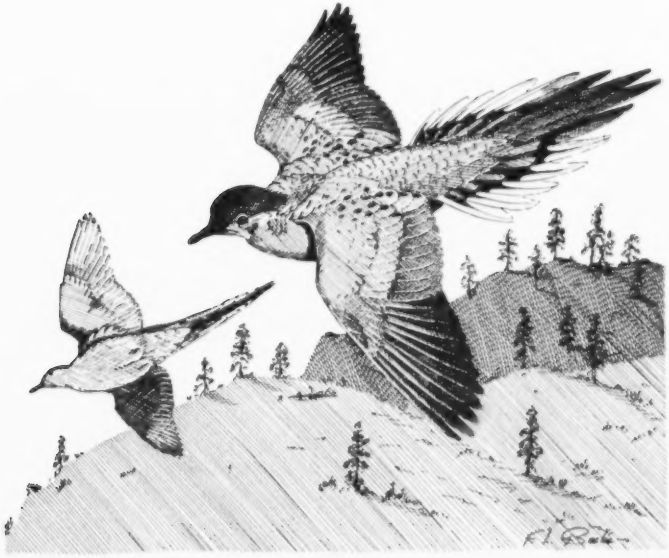
THE MOURNING DOVE

The mourning dove is a beautiful stream-lined creature, coloured below in soft pinkish-buff, above in bluish-grey. Fine black markings are present on the scapulars and on the tail. The tail is long, with short outer feathers marked largely in white, while the long central retrices are coloured like the back (*see* illustration).

These slender pigeons have an affinity for the drier sections of the Province. They are plentiful in the southern interior, in the Okanagan and the Osoyoos Lake country, but they are regarded as uncommon on the coast and in the northern interior. However, they sometimes occur in the Puget Sound area and more often on the drier Gulf Islands in the Strait of Georgia and at the south end of Vancouver Island. In June, 1953, Mr. George Hardy, of the Provincial Museum, discovered a nesting pair in oak-madrona habitat at the base of the Saanich Peninsula on Vancouver Island (1954). This was the second nesting record for the British Columbia coast, the first being taken at New Westminster in 1937. The nest and eggs were found in both cases according to these records.

The nest of the mourning dove is a flimsy structure built sometimes at the base of a limb, but usually in a thicket or on the ground. It is composed of a few sticks, which always seem to be precariously balanced, and the two white eggs deposited also appear ready to fall out at any moment. However, despite the

small clutch of eggs and apparent inadequacies of the nest, these birds are numerous enough to be included on the game list in some parts of their range in the southern United States, where they are eagerly sought by sportsmen. Small (about a foot long stretched out), beautiful, fast of wing, and delicate of flesh, it has indeed all of the requisites of a good game bird. In Canada, however, the mourning dove is completely protected.



Mourning dove.

Mourning doves prefer open country where occasional deciduous-filled ravines, bluffs, and thickets prevail. They are frequently seen perched on telephone wires in our southern interior during the summer months. During the heat of the day they often seek out shady thickets, and in the sage lands are sometimes flushed from under the sage and rabbit brush.

These birds feed on small fruits, mast, and grains. They seldom travel in large flocks, being seen more often as single birds, pairs, or in the fall as family groups.

Occasionally a few mourning doves winter in southern British Columbia, but during September most of them migrate to the southern United States, returning again in May and June to raise their young. It is during the migratory periods that one is most likely to observe these birds on the coast, but in the valleys of southern interior British Columbia they are plentiful throughout the summer months.

REFERENCES

BENT, ARTHUR CLEVELAND.
1932. Life Histories of North American Gallinaceous Birds. Bull. 162, U.S. Nat. Mus.

HARDY, GEORGE A.
1954. Nesting of Mourning Dove on Vancouver Island. Murrelet, Vol. 35, pp. 13.

MUNRO, J. A., AND COWAN, I. McT.
1947. A Review of the Bird Fauna of British Columbia. Special Publ. No. 2, Prov., Mus., B.C.

PETERSON, ROGER TORY.
1941. A Field Guide to Western Birds. Riverside Press, Cambridge, Mass.

TAVERNER, P. A.
1934. Birds of Canada. Bull. 72, Nat. Mus. of Canada.

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